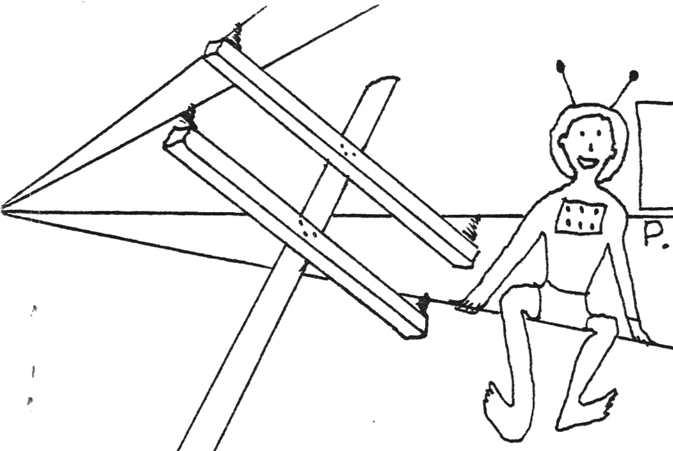


FRIENDLY

P.O. BOX 122 WALLINGFORD, PA. 19086

VOL. I NO. I

Computer Loading From Casette Tape

Difficulty with loading programs from cassette tape is a common problem with the Timex/Sinclair and other inexpensive computers. Loading programs easily is a skill, and any skill requires study and practice. So this article provides the information you need. If you use this information, and refer to this article while loading programs, you will develop the skill necessary to be able to load your programs successfully on the first try everytime (well, nearly every time). That's our goal here.

1) Connect computer socket marked "ear" with the socket on your recorder marked "ear phone". (It may be labeled "monitor" or "output" but where you have a choice, the "earphone" socket is preferred.
2) Set volume control to about 3/4 of the maximum volume (or set volume by instructions below). Set tone control, if you have one, so that treble is high and bass is low.
3) Type in LOAD "program name". Do not press "enter".
4) Place cassette in recorder, rewind it fully, and press "play".
5) Press enter on your Timex/Sinclair keyboard.
6) You will see thin, squiggly lines on the screen, then thick, horizontal bars. These bars mean the program is loading, and will continue for the time specified on the instruction sheet for the program you purchased. When the program is loaded, you will receive further instructions on your TV screen.
7) If you get a K cursor on your screen, the program has not loaded properly. See Do's and Don'ts and If the program doesn't load below.

Do's and Don'ts of Program Loading

DO:

1) Use a good quality cassette player. Not necessarily an expensive stereo deck; a good quality portable is fine. You can get one for $25 to $40.
2) Keep recorder heads clean. Especially if you use cheap tape. (The "head" is the device which changes a magnetic signal on the tape into an electrical signal. To learn how to clean the heads, see the recorder manual. or buy a head cleaning product with directions.)
3) Always rewind the cassette as soon as you are done loading, and put it back in the box. It's very important that the tape stays clean. And close the lid of the recorder, too.

DON'T:

1) Do not load from a metal table.
2) Do not place recorder within 3 feet of TV.
3) Do not leave microphone jack plugged into recorder while loading.
4) Do not touch the computer, recorder, or wires while program is loading.
5) Never, never touch the tape itself.
6) Do not use batteries (the Timex/Sinclair manual warns that some tape recorders can record a hum when plugged into house current, and suggests operating such a recorder on batteries. We disagree. If your recorder records a hum, then it is broken, and should be fixed or replaced).

If the Program Doesn't Load

1) First, clean the tape recorder heads. Whenever we have trouble loading a program, we clean the heads first. Use alcohol and cotton swabs (Q-tips) or a special cleaning and demagnetizing tape.

2) Set the volume. A method is detailed below.
3) Review the Do's and Don'ts. Do the Do's and Don't do the Don'ts.
4) You may have to wiggle the plug in the earphone socket of the recorder. If the tape is playing through the speaker of your recorder, then the jack is not properly connected.

Setting The Volume

Setting the volume is important. Here is a method for getting it right.

1) Follow the loading instructions above, setting volume at about 3/4.
2) Watch the TV screen. When the thick horizontal bars appear, slowly increase volume until the bars get noticeably much thinner or the volume is all the way up. Note this volume.
3) Now decrease the volume slowly until the screen suddenly goes white. Note the volume again.
4) The proper volume is halfway between these two. For example, if the upper volume is 10, and the lower is 3, then the proper volume is 6 1/2.
5) Rewind the cassette, connect the cord, set volume to the level determined, and load the cassette.

General Comments

If you have trouble loading a purchased program, but you eventually are successful, put a blank cassette in your recorder and make your own copy. A tape which is recorded on your own recorder should be easier for you to load next time.

We assure you that it is possible to be skillful enough to load your programs on the first try almost every time. We know because we do. We hope you will too.

***

CONTRIBUTED MATERIAL

Friendly welcomes programs and/or articles. Please send SASE if you want the material returned. Send typewritten article, printed program listing, and/or cassette.

We will pay $10.00 for any program printed and 1¢ per character for articles. This payment gives us the non-exclusive right to use the program in printed form, world-wide.

RATINGS

Every article in this newsletter is dedicated to a particular group of readers-- see the box next to the title of any article. We do this to help you choose those articles which will be most interesting and understandable to you at your level of experience. Mostly, we want the beginner to avoid being overwhelmed by the apparent difficulty of programming when he tries to read an article intended for advanced programmers.

So here are our definitions of the levels of experience:

Beginner - Anyone who can set up their Timex/Sinclair and enter simple Basic programs on the keyboard. We presume you have read the first three chapters of the manual.

Basic Programmer - Anyone who can compose their own simple basic programs. We presume you have read the manual through Chapter 11.

Experienced Basic Programmer - Anyone who fully understands all the functions and statements of Basic, and can compose and debug extended programs.

Advanced Programmer - Anyone who can enter machine code programs, and has read and understands the last three chapters of the manual.

***

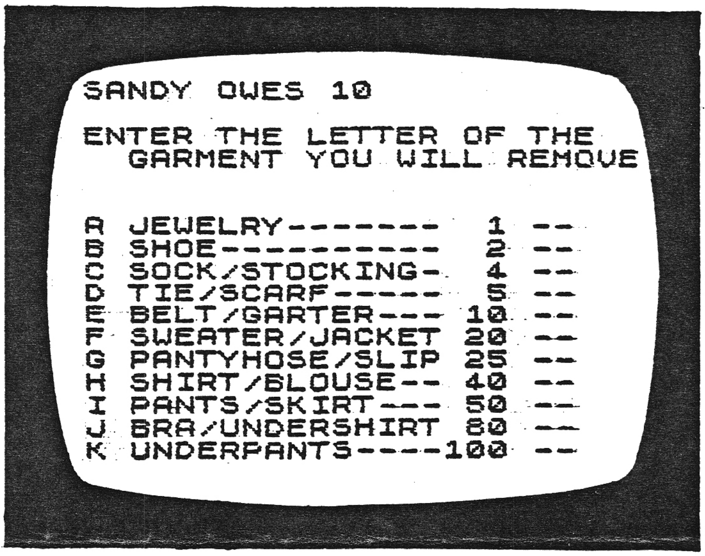
NEW PRODUCT ANNOUNCEMENT

Original Programs, Phoenix Arizona has developed and is now marketing the "Problem Solver". The Problem Solver is an external voltage regulator that will eliminate glitches due to overheating, and loading problems. Satisfaction is guaranteed.

This plug in circuit includes an on/off switch in the power line that will save wear and tear on your sockets. Worn sockets have been known to cause glitches by themselves.

They offer three ways to buy: schematic, parts list and assembly directions for $12.95; complete kit for $24.95; or wired and tested for $49.95. For further information, or to order write: Original Programs, 3763 Crocus Dr., Phoenix, Arizona 85023.

***



```
SANDY OWES 10

ENTER THE LETTER OF THE
  GARMENT YOU WILL REMOVE

A JEWELRY-------   1 --
B SHOE----------   2 --
C SOCK/STOCKING-   4 --
D TIE/SCARF-----   5 --
E BELT/GARTER---  10 --
F SWEATER/JACKET  20 --
G PANTYHOSE/SLIP  25 --
H SHIRT/BLOUSE--  40 --
I PANTS/SKIRT---  50 --
J BRA/UNDERSHIRT  80 --
K UNDERPANTS----100 --
```

STRIP POKER

by **FRIENDLY COMPUTER**

$9.95

For 2 or more players

A completely friendly game

Can be played by anyone. The computer deals the cards, records the bets, announces the winner, guides the players through the game, and does all record-keeping.

The traditional game improved

An original point system allows betting and handicapping, if you choose those options.

How to order

Get cassette + instructions for $9.95-- no additional charges. Use order form on back page.

A SHORT UTILITY

For the Basic Programmer

A utility is a program which helps you write other programs.

This utility lets you know how much empty space remains in your memory.

I enter it at 9900 so it won't interfere with the program I'm writing. When I think I may be close to running out of memory I "**GOTO** 9900", and I see how many bytes I have left.

The number displayed is actually not exactly correct, but it's very close.

```
9900 PRINT PEEK 16386+256*PEEK 1
6387-PEEK 16412-256*PEEK 16413;"
 BYTES REMAIN"
```

***

BASIC WITH STYLE

For the Experienced Basic Programmer

This column is for the reader who already programs in Basic, and is ready to improve his skills and become a better programmer.

Have you ever written a **FOR NEXT** loop which ran too darn slow? The first thing you do is make sure you don't have any statements inside the loop which don't have to be inside the loop. But what if it's still too slow? This article concerns a method of speeding up **FOR/NEXT** loops and **GOTO** and **GOSUB**.

First, here is something for you to try: Load a long program, the longer the better. Then, enter the following code; it doesn't matter if you're over-writing the program you just loaded from tape.

```
9900 FOR N=1 TO 50
9910 NEXT N
9920 STOP
```

Now Put your machine in **SLOW** mode and run this loop (**RUN** 9900) and time it-- get a clock and count seconds from the moment you hit **ENTER** after **RUN** 9900 until the report code 9/9920 appears on the screen.

Now enter the same code at line 10 like this:

```
10 FOR N=1 TO 50
20 NEXT N
30 STOP
```

Run that loop and time it.

Surprise! It runs faster at the lower line number. A lot faster. In my test, I got 15 seconds versus 2 seconds.

Well, let's try another experiment. This time we'll test **GOSUB**'s.

```
9901 RETURN
9910 GOSUB 9901
9920 GOSUB 9901
9930 GOSUB 9901
9940 GOSUB 9901
9950 GOSUB 9901
9960 GOSUB 9901
9970 GOSUB 9901
9980 GOSUB 9901
9990 GOSUB 9901
9995 STOP
```

Make sure the machine is in slow mode, then **RUN** 9910 and time it.

I got 6 seconds. Now try this:

```
 1 RETURN
10 GOSUB 1
20 GOSUB 1
30 GOSUB 1
40 GOSUB 1
50 GOSUB 1
60 GOSUB 1
70 GOSUB 1
80 GOSUB 1
90 GOSUB 1
95 STOP
```

When I **RUN** I get less than 1 second. So nine **GOSUB**'s and **RETURN**'s take 6 seconds at the end of a 16K program and less than 1 second at the beginning. The same thing happens with **GOTO**.

Why? Apparently, when the Sinclair wants to find a line number, it starts at the beginning of the program and looks at each line number in order until it finds the one it's looking for.

So if your **FOR/NEXT** loop at line number 5500 runs too slow, put it near the beginning of the program. Likewise, if a particular section of your code has a lot of **GOTO**'s you might want to make that section a sub-routine, and put it near the beginning of the program.

Program Line Organization

All of this suggests a different organization of program lines than one might otherwise use. Here is the system I use.

Line Number	Contents
0-99	Machine Code Routines and begin statement
100-999	**FOR/NEXT** loops
1000-7999	Sub-routines
8000-9499	Main Program
9500-9999	Utilities

The machine code routines are contained in **REM** statements. The first line after these **REM** statements is a begin statement (**GOTO** 8000), so the user can start the program simply by entering **RUN** or **GOTO** 1.

I leave so much room for sub-routines because my main program is usually only 20 lines or so. More about that in the next column.

Last of all, the utilities are those routines which help you write the program, but aren't actually part of the program. An example is the "Bytes Remaining" utility listed elsewhere in this newsletter.

Next Issue

Our next column concerns the planning and development of a new program, and more about how to organize the actual Basic code.

***

CLASSIFIED ADS

Get in on the ground floor of a growing publication. Reach lots of Sinclair owners for only $1.00 per 45 character line. Send typed (or legibly printed) ad with payment to:

Friendly
Box 122
Wallingford, PA 19086

PITCHER

For All Readers

This game is a simulation of baseball pitching strategy. You have three pitches-- a curveball, a fastball, and a screw ball.

The curve is a conservative pitch. If the batter hits your curveball, he will get either a single or a double.

The fastball will produce a strike more often than the curve, and will be hit much less often. But when it *is* hit, it will go for extra bases, usually a triple or home run.

The screw ball is seldom hit, and when it is hit it's nearly always a single. But the screw ball is hard to control, and will be called a ball much more often than either of the other pitches.

When you first **RUN** the game, you will be asked to enter the names of the two pitchers. The home team will *pitch* first.

The game display will look like this:

```
BALLS STRIKES OUTS VISITOR HOME
----- ------- ---- ------- ----
  1      2      2     0      0

PITCHER:                 INNING
    LEFTY                  1



1 CURVE

2 FASTBALL

3 SCREWBALL
                          0/////1
STRIKE 2                  /     /
                          /     /
                          /     /
                          /     /
                          /     /
YOUR PITCH?               0/////█
```

You enter the number of the pitch you choose. The figure in the lower right represents the baseball diamond. There is a runner on first base (represented by a 1).

The game is 3 innings long. For a 9-inning game change line 2810 to **FOR M = 1 TO 9**.

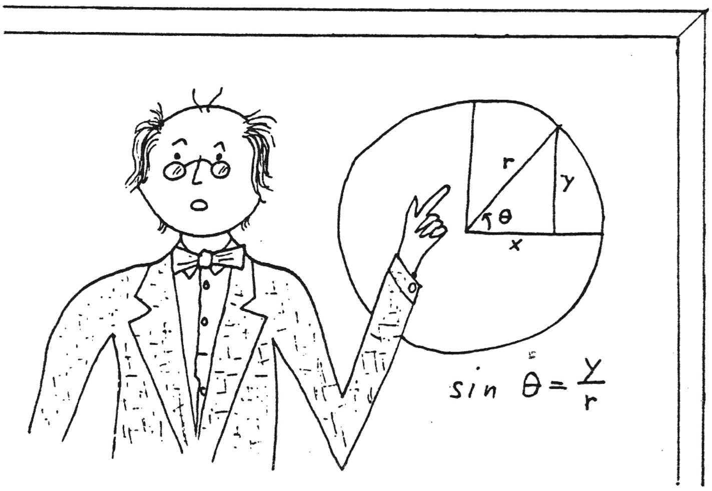
When you enter the program, you can omit **REM** statements if you want to.

In line 2620 there are 23 spaces between the quotes.

```
  5 SLOW
 10 RUN 2600
100 REM ██BASE RUNNERS██
105 PRINT AT 16,0;"ITS A HIT"
110 LET R=0
120 FOR C=H TO 1 STEP -1
130 LET R=R+B3
140 LET B3=B2
150 LET B2=B1
160 LET B1=0
170 IF C=H THEN LET B1=1
180 GOSUB 300
190 NEXT C
200 IF R>0 THEN PRINT AT 16,11;
R;" RUNS SCORE"
210 LET R(N)=R(N)+R
```

```
 240 RETURN
 300 PRINT AT 14,24;B2;"/////";B
1
 310 FOR I=1 TO 5
 320 PRINT TAB 24;"/     /"
 330 NEXT I
 340 PRINT TAB 24;B3;"/////"
 344 IF R=0 THEN PRINT AT 20,30;
"█"
 346 IF R<>0 THEN PRINT AT 20,30
;R
 350 RETURN
1000 REM ██CURVE██
1010 IF PH<6 THEN GOTO 2000
1020 IF PH<10 THEN GOTO 2400
1030 IF PB<8 THEN GOTO 1100
1040 LET H=2
1050 GOSUB 100
1060 PRINT AT 16,0;"A DOUBLE "
1070 GOTO 2875
1100 LET H=1
1110 GOSUB 100
1120 PRINT AT 16,0;"A SINGLE "
1130 GOTO 2875
1200 REM ██FASTBALL██
1210 IF PH<8 THEN GOTO 2000
1220 IF PH<11 THEN GOTO 2400
1230 IF PB<3 THEN GOTO 1300
1240 IF PB<6 THEN GOTO 1040
1250 LET H=4
1260 GOSUB 100
1270 PRINT AT 16,0;"A HOME RUN"
1280 GOTO 2875
1300 LET H=3
1310 GOSUB 100
1320 PRINT AT 16,0;"A TRIPLE "
1330 GOTO 2875
1400 REM ██SCREW BALL██
1410 IF PH<6 THEN GOTO 2400
1420 IF PH<11 THEN GOTO 2000
1430 IF PB<9 THEN GOTO 1100
1440 GOTO 1040
2000 REM ██STRIKE██
2010 LET S=S+1
2020 PRINT AT 16,0;"STRIKE ";S
2040 IF S<3 THEN GOTO 3000
2050 LET OUT=OUT+1
2060 PRINT AT 16,9;"YER OUT"
2065 IF OUT=3 THEN GOTO 3100
2070 GOTO 2900
2400 REM ██BALL██
2410 LET B=B+1
2420 PRINT AT 16,0;"BALL ";B
2440 IF B<4 THEN GOTO 3000
2450 PRINT AT 16,7;"TAKE YER BAS
E"
2452 IF B1=0 THEN GOTO 2456
2453 IF B2=1 THEN GOTO 2460
2454 LET B2=B1
2456 LET B1=1
2457 GOSUB 300
2458 GOTO 2070
2460 LET H=1
2470 GOSUB 110
2480 GOTO 2070
2600 REM ██INITIALIZE██
2620 LET B$="
  "
2626 DIM R(2)
2630 DIM N$(2,17)
2640 PRINT TAB 4;"HOME PITCHER N
AME?"
2660 INPUT N$(1)
2665 RAND 0
2670 PRINT AT 0,0;"VISITING"
2680 INPUT N$(2)
2690 CLS
2700 PRINT "BALLS STRIKES OUTS V
ISITOR HOME"
2710 PRINT "----- ------- ---- -
------ ----"
2730 PRINT AT 4,0;"PITCHER:";TAB
 22;"INNING"
2740 PRINT AT 9,0;"1 CURVE"
2750 PRINT AT 11,0;"2 FASTBALL"
2760 PRINT AT 13,0;"3 SCREWBALL"
2800 REM ██MAIN PROGRAM██
2810 FOR M=1 TO 3
2815 PRINT AT 5,25;M
2820 FOR N=1 TO 2
2830 LET OUT=0
2840 LET B1=0
2850 LET B2=0
2860 LET B3=0
2870 PRINT AT 5,5;N$(N)
2875 LET R=0
2880 GOSUB 300
2900 LET B=0
2910 LET S=0
2930 PRINT AT 2,15;OUT;TAB 22;R(
1);TAB 28;R(2)
2940 PRINT AT 18,0;"BATTER UP"
3000 PRINT AT 2,2;B;TAB 9;S
3010 LET PH=RND*12
3020 LET PB=RND*10
3030 PRINT AT 21,0;"YOUR PITCH?"
3040 INPUT A
3050 PRINT AT 16,0;B$;AT 18,0;B$
;AT 21,0;B$
3060 GOTO 800+200*A
3100 PRINT AT 16,0;"YOURE OUT OF
 THE INNING"
3105 NEXT N
3110 NEXT M
```

***



TRIG TEACHER

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Trig Teacher is a program which explains and gives examples of the use of **SIN**, **COS**, **TAN**, **ASN**, **ACS**, **ATN**, **LN**, **EXP**, and **PI**. Better than a book-- Trig Teacher actually shows you what these functions are and how they are used.

Useful formulas

You also get a list of math formulas that you can use in your programs, with full instructions and sample programs.

How to order

Get cassette + instructions + math formulas and sample programs for $9.95. Use order form on back page.

A BETTER SCROLL

For the Experienced
Basic Programmer

(Editor's Note: This entire article only applies when a memory module is attached to the computer.)

Here's the situation. You've written a program using **SCROLL**. After executing **SCROLL** a number of times, the program performs a **CLS**. What happens? The **CLS** is S-L-O-W.

SCROLL can slow down a **PRINT** statement too. If you perform a **SCROLL**, then **PRINT** something on the bottom line, the **PRINT** will be slower than usual.

I decided to investigate this when I was trying to speed up a program that was running too slow. I'll give you the results of my investigation, and a machine code **SCROLL** routine, but first, some basics.

There is a section of memory called the display file which holds the information to be displayed on the screen. If you want a character to appear on the screen you can, of course, use **PRINT**. But if you **POKE** a number into an address within the display file, your computer will consider that number to be a character code and will display the corresponding character on the screen. (See "The Character Code" in the appendix of your manual-- the first two columns are the characters and their codes.) For example, if you **POKE** the number 51 into the display file, the letter N will appear on the screen.

Let's try it. Enter this on your keyboard:

POKE PEEK 16396 + **PEEK** 16397*256 + 1,51

You should see an N in position 0,0.

Now try this:

PRINT PEEK 16396 + **PEEK** 16397*256

This is the beginning address of your display file. When you have a 16K or more memory module, the display file looks like this:

118
32 bytes for line0, 118
32 bytes for line1, 118
32 bytes for line2, 118
o o o
32 bytes for line21, 118

The number 118 is the code for **ENTER**. When the computer is scanning the display file and displaing the contents on the TV, if it comes across a 118, it knows it's at the end of a line. Also, the first memory position of the display file is filled with a 118.

In the display file, 32 memory positions are allocated to each line, even if it's empty. An empty line would be represented in the display file by 32 0's since 0 is the code for a space. Yes, a space is a character. I am ignoring lines 22 and 23, because these lines are not included in the **SCROLL**.

So what happens when you perform a **SCROLL**? Everything is moved up one line. And the bottom line is made blank. Ah, there's the rub. The computer does not fill out the bottom line in the display file with 0's (the code for spaces). He replaces the bottom line with a single 118 (for **ENTER**).

If you execute 22 **SCROLL**s, the entire display file consists of just 23 memory positions, each one holding a 118. Now, if you execute a **CLS**, the entire file must be filled out with 0's again, and that, for some reason, is terribly slow. If you **PRINT**, the line you're printing on must be filled out with 0's-- slow.

The solution? I wrote a machine code routine which moves the entire screen up one line, a normal **SCROLL**; but it then fills out the bottom line with 0's. So if you execute my scroll 24 times, the display file will be filled out with 0's; a **CLS** or **PRINT** will operate at full speed.

And as an extra bonus, my scroll allows you to scroll more than one line if you want.

Here's the program, with complete instructions on how to enter it.

First, key in the following BASIC program:

```
10■FOR N=16514 TO 16545
20 SCROLL
30 PRINT N,
40 INPUT M
50 POKE N,M
60 PRINT M
70 NEXT N
```

Next, enter the following statement:

```
 1 REM 00000000000000000000000
0000000000000
```

That's 37 0's. You must have at least 37 0's, and it must be the first statement in the program.

Now **RUN** the program. An address will be displayed, and the computer will wait for you to enter the number corresponding to that address from the following table:

Address	Enter This Number
16514	62
16515	1
16516	237
16517	91
16518	12
16519	64
16520	19
16521	42
16522	12
16523	64
16524	1
16525	34
16526	0
16527	9
16528	1
16529	181
16530	2
16531	237
16532	176
16533	14
16534	32
16535	235
16536	54
16537	0
16538	35
16539	13
16540	32
16541	250
16542	61
16543	200
16544	24
16545	226

You may now delete lines 10 through 70. The machine code program resides in line 1.

When you want to scroll, use the statement **RAND USR** 16514.

If you want to scroll more than one line at a time, poke the number of lines into address 16515. For example, suppose you want to move the entire display up three lines. You'd enter:

```
 100 POKE 16515, 3
 110 RAND USR 16514
```

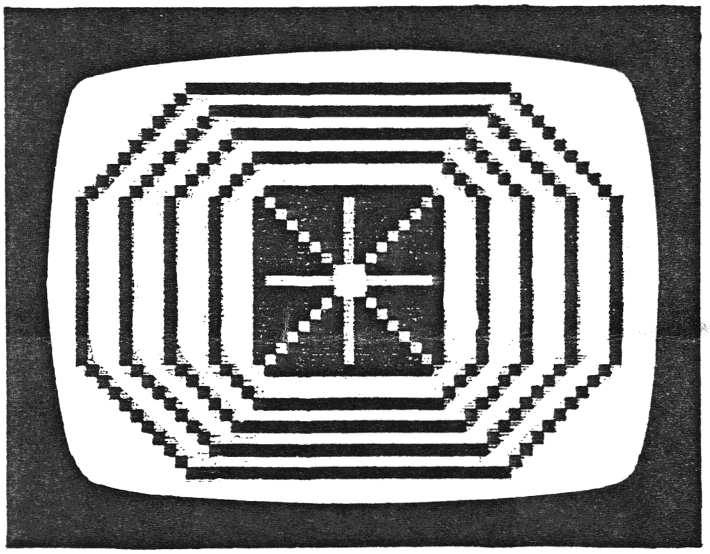
Finally, if you get tired of entering the number 16514, you can **LET** S = 16514 early in the program. Then use **RAND USR** S when you want to scroll. Just be sure you don't use the variable S anywhere else in the program.

So there you have it folks! The new improved scroll with rapid recovery time.

***

DRAW AND RECALL

by FRIENDLY COMPUTER



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- Draw on your TV screen.
- Your drawing is automatically stored.
- Recall the drawing later.

How it works

You enter an angle and a distance, the computer draws the line. You choose slow or fast mode.

Features

- "Pick up the Pen" (move to a new location)
- Erase
- Delete
- Display screen position
- Instructions are contained in the program.

The picture above was done with "Draw and Recall".

How to order

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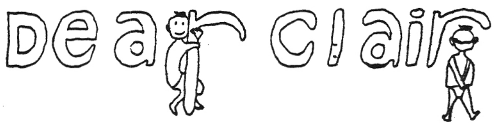
Or call anytime

(215) 623-1337

You get cassette + instructions
Requires 16K



Address your letters to:
Dear Clair
Box 122
Wallingford, PA 19086

Clair is happy to receive your letters, whether they be serious or frivolous, questions or comments.

Dear Clair,

I am about to be married, but I'm concerned that my peculiar heart ailment may prevent me from fulfilling my future marital obligations.

It started when my love and I had a little spat. After a day without her I developed an unpleasant pain in my heart, often accompanied by a tear in my eye. This ailment thankfully was relieved when we resolved our differences, but now a new cardiac incapacity has developed. Every time I kiss my bride-to-be, my heart alarmingly skips a beat (I also get distinct mental images of the bouquet of a fine wine, but this aspect is probably psychosomatic). What should I do?

Signed
Perplexed

Dear Perplexed,

Sounds like you got a touch of rockin' pneumonia. Spend more time with your computer and less time with (ugh) people, not to mention radios, and you'll be fine.

Clair

Dear Clair,

How can I solve the problem of a loose connection between my RAM pack and the computer? Color me
Frustrated

Dear Frustrated,

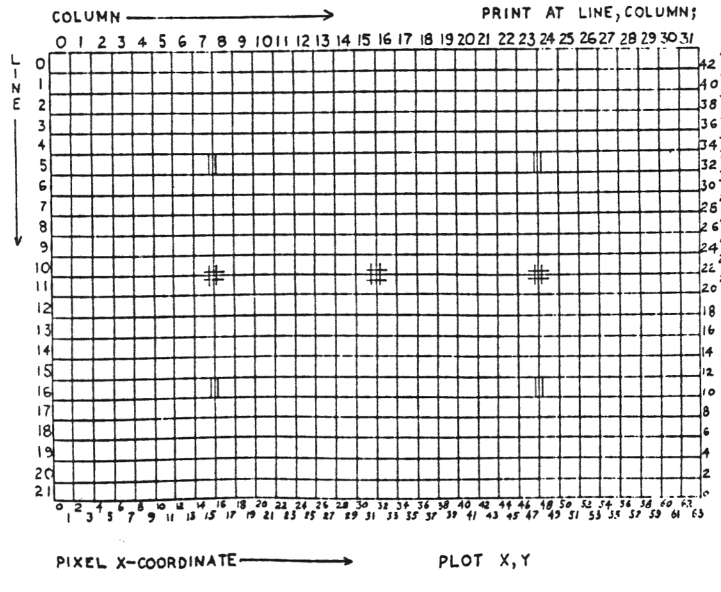
Color yourself saved. Here's a repair from Clair.

Buy yourself a package of erasers-- the wedge-shaped kind that slip over the butt end of a pencil. Pull out your RAM pack and "erase" the contacts on the computer that the RAM pack slides onto. Be sure to erase both sides- top and bottom. I usually hold the computer up so the stray bits of eraser won't fall inside the case.

If I do this cleaning about once every 2 weeks, I don't have any trouble. Unless, of course, someone trips over the wire and knocks the computer on the floor.

Another tip: Make sure the computer is level before you start. If it rocks when you press the keys, put a folded paper scrap under the corner to steady it.

***



GRAPHICS CHARTS

Save time and tedium

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A full 8 1/2" X 11" size, they're printed with line and column numbers, and X,Y PLOT numbers.

$4.95 pad of 100

How to order

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A Friendly Survey
(For All Readers)

Step right up folks! Speak out! Make yourself heard! Here's your chance to let the software industry know what sort of programs you would like to see. You can contribute to the development of Sinclair software. The results of this survey will be published for one and all to see in a future issue of "Friendly".

Write your answers on this page or on another sheet of paper. Feel free to skip any question you don't want to answer. Mail the completed survey to:

Friendly
Box 122
Wallingford, PA 19086

Your Programming Ideas and Interests

1) If your Sinclair could do anything at all, what would you most want it to do?

2) Anything else you'd like it to do?

3) Have you purchased programs for your Sinclair? If yes, which ones?

4) Are there any programs you'd like to buy which are not available?

5) Last time you got a program did it have written instructions? Were they easy to understand?

Your Programming Experience

6) Do you write your own Sinclair programs? If yes, how long is the longest program you've written? (That is, how many lines?)

7) Is your Sinclair the first computer you've had a chance to program?

Marketing Section

8) What would persuade you to buy a program for your Sinclair?

9) How do you decide if the price is right?

10) Which of the following statements would be the most likely to interest you in buying a program? (circle one)

It Works
It's Friendly
More For Your Money
It's Easy To Use
It's Fun
You Can Use It
You'll Love It

Wrap-Up

11) Is there anything else you would like us to know?

Thank you for sharing your ideas; may the universe of Sinclair computing be richer thereby.

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All programs require 16K